Section A

INDEX TO VOLUME 18

Authors

Allen, F. and Schwartz, M.—The validity of the Ferry-Porter law in depressed and enhanced states of retinal sensitivity, 151.

Babbitt, J. D.—The permeability of building papers to water vapour, 90.

Observations on the permeability of hygroscopic materials to water vapour. I. Observations at relative humidities less than 75%, 105.

Brown, W. W.—See Langstroth, G. O.

Clark, A. L. and Katz, L.—Resonance method for measuring the ratio of the specific heats of a gas, C_p/C_v. Part I, 23. Part II, 39.

Cook, W. H. and Steeves, T. A.—A fluid system for transferring heat over small temperature gradients without forced circulation, 144.

Douglas, A. E. and Herzberg, G.—Spectroscopic evidence of the B_2 molecule and determination of its structure, 165.

Band spectrum of the BN molecule, 179.

Elson, R. G., Smith, H. G., and J. O. Wilhelm.—The specific heat of manganese from 16° to 22° K., 83.

Herzberg, G.—See Douglas, A. E.

Herzberg, G., Herzberg, L., and Milne, G. G.—On the spectrum of the P_2 molecule, 139.

Herzberg, G. and Sutton, R. B.—Tail bands of the Deslandres-d'Azambuja system of the C_2 molecule, 74.

Herzberg, L.—See Herzberg, G.

Katz, L.—See Clark, A. L.

Langstroth, G. O., Brown, W. W., and Newbound, K. B.—Collimated light beams in spectrophotometry, 186.

Larose, P.—A new form of abrasion tester, 161.

MacKinnon, K. A.—Radio frequency measurements of ground conductivity in Canada, 123.

McLeish, C. W.—Note on a method of plotting electron distribution curves for the F layer, 98.

Milne, G. G.—See Herzberg, G.

Newbound, K. B.—See Langstroth, G. O.

Niven, C. D.—Thermal conductivity of some sedimentary rocks, 132.

Prebus, A.—Improved pole piece construction of the objective lens of a magnetic electron microscope, 175.

Schwartz, M.—See Allen, F.

Smith, H. G.—See Elson, R. G.

Steeves, T. A.—See Cook, W. H.

Sutton, R. B.—See Herzberg, G.

Watson, W. H.—On potential momentum and momentum fields in dynamics, 1.

Wilhelm, J. O.—See Elson, R. G.

Woonton, G. A. A recording system designed for the investigation of the electrical relations in the brains of small animals, 65.

SECTION A

INDEX TO VOLUME 18

Subjects

Abrasion tester, A new form of, 161.

Argon, Ratio of specific heats of, by resonance method, 47.

Asphalt saturated building papers, Permeability of, to water vapour, 92.

Band spectrum of the BN molecule, 179.

B_2 molecule, See Boron molecule.

BN molecule, Band spectrum of, 179.

Boron molecule, Diatomic, Spectroscopic evidence of, and determination of its structure, 165.

Boron nitride molecule, Band spectrum of, 179.

Brain potential variations in small animals, Recording system for study of, 65.

Building papers, Permeability of, to water vapour, 90.

Calorimeter for measurement of specific heats of solids and powdered specimens at liquid hydrogen and helium temperatures, 83.

Use with manganese, 83.

Carbon dioxide, Ratio of specific heats of, by resonance method, 41.

C_2 molecule, Tail bands of the Deslandres-d'Azambuja system of the, 74.

Carbon molecule, Diatomic, See C_2 molecule.

Collimated light beams in spectrophotometry, 186.

Conductivity

Ground, Radio frequency measurements of, in Canada, 123.

Thermal, of some sedimentary rocks, 132.

Deslandres-d'Azambuja system of the C_2 molecule, Tail bands of the, 74.

Diatomic boron molecule, See Boron molecule.

Diatomic carbon molecule, See C_2 molecule.

Diatomic phosphorus molecule, See Phosphorus molecule.

Diffusance of water vapour through building papers, 91.
hygroscopic materials, 105.

Dynamics, Potential momentum and momentum fields in, 1.

Electromotive forces in brains of small animals, Recording system for study of, 65.

Electronic structure of diatomic boron molecule, 172.

Electron microscope, Magnetic, Improved pole piece construction of the objective lens of, 175.

Electron distribution curves for the *F* layer, A method of plotting, 98.

Felts, Permeability of, to water vapour, 91.

Ferry-Porter law in depressed and enhanced states of retinal sensitivity, Validity of, 151.

Fibreboard, Transmission of water vapour through, at relative humidities below 75%, 112.

F layer, Method of plotting electron distribution curves for the, 98.

Gas, Resonance method for determining specific heats of a, 23, 39.

Ground conductivity in Canada, Radio frequency measurements of, 123.

Heat(s)
Fluid system for transferring, over small temperature gradients, without forced circulation, 144.

Specific
of a gas, Resonance method for measuring ratio of, 23, 39.
of manganese from 16° to 22° K, 83.

Helium, Ratio of specific heats of, by resonance method, 48.

Hydrogen, Ratio of specific heats of, by resonance method, 45.

Hygroscopic materials, Permeability of, to water vapour, 105.

Kraft papers, Permeability of, to water vapour, 93.

Lens, Objective, of magnetic electron microscope, Improved pole piece construction of, 175.

Light beams, Collimated, in spectrophotometry, 186.

Limestone, Conductivity of,
bluish grey, 135.
buff, 135.

Manganese, Specific heat of, from 16° to 22° K, 83.

Marble, Thermal conductivity of,
black, 134.
brown, 134.
white, 134.

Microscope, Magnetic electron, Improved pole piece construction of objective lens of, 175.

Moisture, Permeability of building papers to, 90.

Moisture content gradients through hygroscopic materials, 115.

Momentum fields and potential momentum in dynamics, 1.

Nitrogen, Ratio of specific heats of, by resonance method, 39.

Nuclear spin of B^{11}, 171.

Optics
Collimated light beams in spectrophotometry, 186.

Papers, Building, Permeability of, to water vapour, 90.

Permeability of
building papers to water vapour, 90.
hygroscopic materials to water vapour, 105.

Phosphorus molecule, Diatomic, On the band spectrum of the, 139.

Potential momentum and momentum fields in dynamics, 1.

Radio frequency measurements of ground conductivity in Canada, 123.

Refrigeration, Fluid system for transferring heat over small temperature gradients without forced circulation, 144.

Resonance method for measuring the ratio of the specific heats of a gas, C_p/C_v, 23, 39.

Retinal sensitivity, Validity of the Ferry-Porter law in depressed and enhanced states of, 151.

Rocks, Sedimentary, Thermal conductivity of some, 132.

Sedimentary rocks, Thermal conductivity of some, 132.

Sheathing papers, Permeability of, to water vapour, 91.

Slate, Thermal conductivity of, 135.

Specific heat of manganese from 16° to 22° K, 83.

Specific heats of a gas, Resonance method for measuring ratio of, 23, 39.

Spectrophotometry, See Spectroscopy.

Spectroscopy
Boron, diatomic molecule, Spectroscopic evidence of, and determination of its structure, 165.
Boron nitride molecule, Band spectrum of, 179.
Carbon, diatomic molecule, Tail bands of the Deslandres-d'Aambuja system of the, 74.
Phosphorus, diatomic molecule, On the band spectrum of the, 139.

Tail bands of the Deslandres-d'Azambuja system, 74.

Tar-saturated building papers, Permeability of, to water vapour, 93.

Temperature gradients, Small, Fluid system for transferring heat over, without forced circulation, 144.

Tester, Abrasion, A new form of, 161.

Textiles
A new form of abrasion tester, 161.

Thermal conductivity of some sedimentary rocks, 132.

Ultra-violet system of P_2, Measurement of some bands in, 139.

Vapour, Water, Permeability of building papers to, 90.

Water vapour, Permeability of
building papers to, 90.
hygroscopic materials to, 105.

Wood, Transmission of water vapour through, at relative humidities below 75%, 111.

CANADIAN JOURNAL OF RESEARCH

VOLUME 18
1940
SECTION B

CANADA

Published by the
NATIONAL
RESEARCH COUNCIL
of CANADA

Section B

INDEX TO VOLUME 18

Authors

Arnell, J. C.—See Parlee, N. A. D.

Arnell, J. C., Dacey, J. R., and Coffin, C. C.—Studies on homogeneous first order gas reactions. XII. The decomposition of glyoxal tetra-acetate, 410.

Ashley, R. W.—See Campbell, A. N.

Brawn, J. S.—See Heddle, R. D.

Campbell, A. N., and Ashley, R. W.—The alloys of aluminium and lead, 281.

Campbell, W. B.—See Morrison, J. L.

Coffin, C. C.—Platinized glass as a laboratory substitute for massive platinum, 318.

Coffin, C. C.—See Arnell, J. C., Parlee, N. A. D.

Collier, H. B.—A small-scale electrodialysis, cell, 252.
The problem of plastein formation.
I. The formation of a plastein by papain, 255.
II. The chemical changes involved in plastein formation by papain and by pepsin, 272.
III. A note on the complexity of peptic plastein in urea solution, 305.
Enzyme inhibition by derivatives of phenothiazine and of sulphanilamide, 345.

Dacey, J. R.—See Arnell, J. C.

Demers, P.—See Lortie, L.

Donald, R. M.—The fractionation of Turner Valley crude oils using Stedman columns, 12.

Dorland, R. M. and Hibbert, H.—Formic acid as a solvent for ozonization investigations, 30.

Findlay, R. A.—See Marshall, M. J.

Finlay, G. R.—See Walker, O. J.

Folkins, H. O.—See Steacie, E. W. R.

Froman, D. K. and McFarlane, W. D.—A photoelectric colorimeter-fluorimeter, 240.

Giguère, P. A. and Maass, O.—Solid solutions of hydrogen peroxide and water, 66.
The heterogeneous catalytic decomposition of hydrogen peroxide in heavy water, 84.
Vapour pressures and boiling points of binary mixtures of hydrogen peroxide and water, 181.

Gordon, W. E. and Spinks, J. W. T.—Nitroxyl perchlorate, 358.

Hamilton, J. D.—Gelation phenomena in wheat flour films, 194.

Heatley, A. H.—A note on the velocity distribution of gaseous molecules; and a table for obtaining values of the error function complement, 123.

Heddle, R. D. and Brawn, J. S.—The phosphorus and iodine contents of British Columbia fish oils, 386.

Hibbert, H.—See Dorland, R. M.

Holder, C. H. and Maass, O.—Solubility measurements in the region of the critical temperature, 293.

Johnson, L. R.—See Thorvaldson, T.

Lathe, F. E.—The determination of the metals of the platinum group in nickel ores and concentrates, 333.

Lortie, L. and Demers, P.—Études physico-chimiques sur les carbonates alcalins.
I. Recherches sur l'activité des ions-hydrogène dans les solutions aqueuses de carbonates alcalins, 160.
II. Calcul des coefficients d'activité des carbonates de sodium et de potassium, en solution aqueuse, 373.

Maass, O.—See Giguère, P. A., Holder, C. H., Mason, S. G., Morrison, J. L., Naldrett, S. N., Ross, A. S.

McCutcheon, J. W.,—Linolenic acid and its isomers, 231.

McFarlane, W. D.—See Froman, D. K., Parker, W. E.

McGinnis, N. A.—See McRae, J. A.

McRae, J. A.—See Marion, L.

McRae, J. A. and McGinnis, N. A.—Derivatives of substituted succinic acids. IV. The action of alkaline sodium hypobromite on some α-alkyl-α'-arylsuccinamides, 90.

Manske, R. H. F.—The alkaloids of fumariaceous plants.
XXIV. *Corydalis ochotensis* Turcz., 75.
XXV. *Corydalis pallida* Pers., 80.
XXVI. *Corydalis claviculata* (L.) DC., 97.
XXVII. A new alkaloid, cheilanthifoline, and its constitution, 100.
XXVIII. *Corydalis nobilis* Pers., 288.
XXX. Aurotensine, 414.

Marion, L.—The reaction of polystyrenes with bromine, 309.

Marion, L. and McRae, J. A.—Naphthalene derivatives from substituted γ-phenylcrotonic esters, 265.

Marshall, M. J. and Findlay, R. A.—The equilibrium pressures of oxygen adsorbed on activated charcoal, 35.

Mason, S. G. and Maass, O.—Measurement of viscosity in the critical region. Ethylene, 128.

Mason, S. G., Naldrett, S. N., and Maass, O.—A study of the coexistence of the liquid and gaseous states of aggregation in the critical temperature region. Ethane, 103.

Morrison, J. L., Campbell, W. B., and Maass, O.—The heats of adsorption and wetting of mercerized celluloses by sodium hydroxide solutions, water, and methyl alcohol, 168.

Mungen, R. and Spinks, J. W. T.—The bromine sensitized photodecomposition of ozone, 363.

Naldrett, S. N.—See Mason, S. G.

Naldrett, S. N. and Maass, O.—A study of the coexistence of the liquid and gaseous states of aggregation in the critical temperature region, 118.
The viscosity of carbon dioxide in the critical region, 322.

Parker, W. E. and McFarlane, W. D.—A proposed modification of Emmerie's iron-dipyridyl method for determining the tocopherol content of oils, 405.

Parlee, N. A. D., Arnell, J. C., and Coffin, C. C.—Studies on homogeneous first order gas reactions. XI. The decomposition of benzylidene diacetate, *o*-chlorobenzylidene diacetate, and benzylidene dibutyrate, 223.

Potvin, R.—See Steacie, E. W. R.

Ross, A. S. and Maass, O.—The density of gaseous chlorine, 55.

Shane, G.—See Steacie, E. W. R.

Spinks, J. W. T.—See Gordon, W. E., Mungen, R., and Watson, L. M.

Steacie, E. W. R.—The quenching of mercury resonance radiation by ethylene, 44.

Steacie, E. W. R. and Folkins, H. O.—The kinetics of the thermal decompositions of the lower paraffins. V. The nitric oxide inhibited decomposition of *n*-butane, 1.

Steacie, E. W. R. and Potvin, R.—Cadmium photosensitized reactions of ethylene, 47.

Steacie, E. W. R. and Shane, G.—The kinetics of the decomposition reactions of the lower paraffins.
VI. Ethane, 203.
VII. The nitric oxide inhibited decomposition of ethane, 351.

Stonestreet, G. O. and Wright, G. F.—Microchemical technique. IV. The microdetermination of mercury and halogen in organomercuric halides, 246.

Tapp, J. S.—The construction and operation of a simple automatic multiple burette, 217.

Thorvaldson, T. and Johnson, L. R.—The selenium content of Saskatchewan wheat, 138.

Walker, O. J. and Finlay, G. R.—The determination of small amounts of fluorine in water. 151.

Watson, L. M. and Spinks, J. W. T.—The separation and identification of the compounds present in a Turner Valley crude oil, 388.

Wright, G. F.—See Stonestreet, G. O.

SECTION B

INDEX TO VOLUME 18

Subjects

Absorption spectra, Ultraviolet, of Turner valley crude oil containing aromatics, 25.

1-Acetamino-2-methyl-4-nitronaphthalene, 269.

Activity coefficients
of binary mixtures of hydrogen peroxide and water, 190.
of potassium and sodium carbonates in aqueous solution, 373.

Adsorption
Equilibrium pressures of oxygen adsorbed on activated charcoal, 35.
Heat of, of sodium hydroxide solutions, water, and methyl alcohol by mercerized celluloses, 168.

Alberta waters, Determination of fluorine in, 151.

Alkaline carbonates
pH of solutions of, 160, 164.
See Potassium and sodium carbonates.

Alkaloid F13, See Cheilanthifoline.

Alkaloid F36 (sinactine), Oxidation of, 100.

Alkaloid F48 (ochotensimine), from Corydalis ochotensis, 76.

Alkaloid F49 from Corydalis ochotensis, 78.

Alkaloid F50 (capaurimine) from Corydalis pallida, 82.

Alkaloid F51 from Corydalis pallida, 82.

Alkaloid F52 from Corydalis claviculata, 99.

Alkaloid F53 from Corydalis nobilis, 290.

Alkaloid F54 from Corydalis nobilis, 292.

Alkaloid F55 from Corydalis nobilis, 291.

Alkaloids of fumariaceous plants,
XXIV. Corydalis ochotensis Turcz, 75.
XXV. Corydalis pallida Pers., 80.
XXVI. Corydalis claviculata (L.) DC., 97.
XXVII. A new alkaloid, cheilanthifoline, and its constitution, 100.
XXVIII. Corydalis nobilis Pers., 288.
XXX. Aurotensine, 414.

α-Alkyl-α′-arylsuccinamides, Action of alkaline sodium hypobromite on, 90.

Alloys of aluminium and lead, 281.

Aluminium and lead, Alloys of, 281.

1-Amino-2-methyl-naphthalene, 268.

1-Amino-2-methyl-4-nitro-naphthalene, 269.

Analysis
Microdetermination of mercury and halogen in organomercuric halides, 246.
Proposed modification of Emmerie's iron-dipyridyl method for determining tocopherol content of oils, 405.

Anaphylactic reaction, in guinea-pigs by plastein in urea, 305.

Apparatus
for microdetermination of halogen, 249.
Photoelectric colorimeter-fluorimeter, 240.
Simple, automatic, multiple burette, 217.
Small-scale electrodialysis cell, 252.
Use of platinized glass in construction of, 318.

Aromatic hydrocarbons, Physical properties of, 28, 403.

Aurotensine
Degradation of, 416.
from Corydalis ochotensis, 78.

Benzoyl hydrogen peroxide, Reaction with polystyrenes, 311.

Benzylidene diacetate, Thermal decomposition of, 223.

Bicuculline, Isolation of, from Corydalis nobilis, 290.

Boiling points of binary mixtures of hydrogen peroxide and water, 181.

Bromine
or chlorine and mercury in organomercurials, simultaneous microdetermination of, 246.
Reaction with
di-indene, 311, 313.
polystyrenes, 309.
-sensitized photodecomposition of ozone, 363.

Bromine oxide, Formation of, in bromine sensitized photodecomposition of ozone, 363.

Burette, Simple automatic multiple, 217.

***n*-Butane,** Nitric oxide inhibited decomposition of, 1.

Cadmium photosensitized reactions of ethylene, 47.

Capauridine from Corydalis pallida, 81.

Capaurimine (F50) from Corydalis pallida, 82.

Capaurine from Corydalis pallida, 81.

Carbon dioxide, Viscosity of, in the critical region, 322.

Catalase, Mammalian, Inhibition of, by phenothiazine derivatives, 346.

Catalytic decomposition of hydrogen peroxide on gold and on glass, in heavy water, 84.

Cellulose(s),
Mercerized, Heats of adsorption and wetting of, 168.
Physical structure of, 178.

Charcoal, Activated cocoanut, Equilibrium pressure of oxygen adsorbed on, 35.

Cheilanthifoline (F13) from Corydalis cheilantheifolia, 100.

Cheilanthifoline O-ethyl ether, Oxidation of, 102.

Chemisorption of oxygen on activated charcoal, 35.

Chlorine,
Gaseous, Density of, 55.
or bromine and mercury in organomercurials, Simultaneous microdetermination of, 246.

***o*-Chlorobenzylidene diacetate,** Thermal decomposition of, 223.

Coexistence curve of
ethane, 113.
ethylene, 119.

Colorimeter-fluorimeter, A photoelectric, 240.

Colorimetric method for determination of fluorine in water, 151.

Corlumine, isolation of, from Corydalis nobilis, 290.

Corydalis cheilantheifolia, Alkaloids from 100.

Corydalis claviculata, Alkaloids from 97.

Corydalis nobilis, Alkaloids from, 288.

Corydalis ochotensis, Alkaloids from, 75.

Corydalis pallida, Alkaloids from 80.

Corypalline from Corydalis pallida, 83.

Corypalmine, Ethylation of, 417.

Corytuberine, from Corydalis nobilis, 292.

Cottons
Heat of adsorption of sodium hydroxide, by, 170.
Heats of wetting of, by water and methyl alcohol, 171.

Critical dispersion temperature, (critical region), 118.

Critical temperature region
Coexistence of liquid and gaseous states of aggregation in,
ethane, 103.
ethylene, 118.
Ethylene, Measurement of viscosity in the, 128.
Solubility measurements in, 293.
Viscosity of carbon dioxide in, 322.

Crotonic esters, γ-Phenyl-, Substituted, Naphthalene derivatives from, 265.

Crude oil, Turner Valley, Distillation of, 12, 388.

Cryptocavine from Corydalis ochotensis, 78.

Cryptopine, from Corydalis nobilis, 291.

Cularine from Corydalis claviculata, 98.

Cytochrome oxidase, See Oxidase.

Decomposition reactions, See Thermal decomposition.

Density of gaseous chlorine, 55.

Density-viscosity-temperature relations of carbon dioxide in critical region, 326, 327.

Deuterium oxide, Heterogeneous catalytic decomposition of hydrogen peroxide in, 84.

Deuterium peroxide and hydrogen peroxide, Relative stability of, to catalysts, 84.

Diethyl malonate, Condensation with phenylacetone, 267.

Di-indene, Reaction of, with bromine, 311, 313.

Distillation of Turner Valley crude oils using Stedman columns, 12, 388.

Electrodialysis cell for removing electrolytes from colloidal solutions, 252.

Emmerie's iron-dipyridyl method for determining tocopherol content of oils, Proposed modification of, 405.

Enzymatic hydrolysis of plasteins, 272.

Enzymatic synthesis of plasteins, 255, 272, 305.

Enzyme(s)

Chemical changes in plastein formation by papain and by pepsin, 272.

Formation of a plastein by papain, 255.

inhibition by phenothiazine and sulphanilamide derivatives, 345.

inhibitors, Effect of, on plastein formation by papain, 260.

Ethane

Kinetics of the

thermal decomposition of, 203.

nitric oxide inhibited thermal decomposition of, 351.

Solubility of hexachloroethane in, in region of critical temperature, 293.

Study of coexistence of liquid and gaseous states of, in critical temperature region, 103.

Ethyl acetate as an ozonization solvent, 31.

Ethyl α-carbethoxy-β-methyl-γ-phenyl-Δ^{α}-butenoate, 267.

Ethyl cyanoacetate, Condensation with phenylacetone, 271.

Ethylene

and ethylene-hydrogen mixtures, Cadmium photosensitized reactions of, 47.

Measurement of viscosity in the critical region, 128.

Quenching of mercury resonance radiation by, 44.

Study of coexistence of liquid and gaseous states of, in critical temperature region, 118.

Ethyl linolenate, Physical properties of, 235, 236.

N-Ethyl-metahemipinimide, 101.

Films

Wheat flour, Gelation phenomena in, 194.

Fish oils

British Columbia, Phosphorus and iodine contents of, 386.

Flour films

Wheat, Gelation phenomena in, 194.

Flow of liquids, Controlled by simple automatic multiple burette, 217.

Fluorimeter, Photoelectric colorimeter-, 240.

Fluorine in Alberta waters, Determination of, by

colorimetric method, 153.

titration method, 152.

Formic acid as a solvent for ozonization investigations, 30.

Comparison with ethyl acetate, 31.

Fractionation of Turner Valley crude oils using Stedman columns, 12, 388.

Fumariaceous plants, Alkaloids of, 75, 80, 97, 100, 288, 414.

Fumaric acid from Corydalis ochotensis, 79.

Gaseous molecules, Velocity distribution of, 123.

Gas reactions

Studies on homogeneous first order

XI. The decomposition of benzylidene diacetate, *o*-chlorobenzylidene diacetate, and benzylidene dibutyrate, 223.

XII. The decomposition of glyoxal tetra-acetate, 410.

Gelation phenomena in wheat flour films, 194.

Glass

Catalytic decomposition of hydrogen peroxide on, in heavy water, 84.

Platinized, as a laboratory substitute for massive platinum, 318.

Glyoxal tetra-acetate, Decomposition of, 410.

Gold

Catalytic decomposition of hydrogen peroxide on, in heavy water, 87.

Detection of platinum metals in assaying for, 335.

Halogen, Microdetermination of, in organomercuric halides, 246.

Heat
of adsorption of sodium hydroxide by mercerized and standard cottons, 170.
of mercerization, 168.
of vaporization, Latent, of hydrogen-peroxide–water mixtures, 189.
of wetting of mercerized cottons by water and methyl alcohol, 171.

Hexachloroethane, Solubility of, in ethane in region of critical temperature, 293.

Hydrocarbons, Physical properties of,
Aromatic, 29, 403.
Naphthenic, 28, 403.
Paraffinic, 27, 402.

Hydrogen-ethylene mixtures, Cadmium photosensitized reactions of, 47.

Hydrogen ion concentration
in sodium and potassium carbonate solutions at 25° C., 160, 164.
Optimum, for plastein formation, by papain, 258.

Hydrogen peroxide
and water, Solid solution of, 66.
and water, Vapour pressures and boiling points of binary mixtures of, 181.
Heterogeneous catalytic decomposition of, in heavy water, 84.
on glass, 84.
on gold, 87.

Hydrolysis, Enzymatic, of plasteins, 272.

***p*-Hydroxylaminobenzenesulphonamide,** Inhibition of mammalian catalase and cytochrome oxidase by, 345.

Iodine and phosphorus contents of British Columbia fish oils, 386.

Iridium, Determination of, in nickel ores and concentrates, 341.

Iron-dipyridyl method for determining tocopherol content of oils, Emmerie's, Proposed modification of, 405.

Isocorypalmine, Ethylation of, 417.

***d*-Isocorypalmine** from Corydalis nobilis, 290.

Isomerism
Linolenic acid and its isomers, 231.

Isoquinoline, 6-Methoxy-7-ethoxy-1-keto-1 : 2 : 3 : 4-tetrahydro-, 100.

Kinetics of the thermal decomposition reactions of the lower paraffins.
V. The nitric oxide inhibited decomposition of *n*-butane, 1.
VI. Ethane, 203.
VII. The nitric oxide inhibited decomposition of ethane, 351.

Latent heat of vaporization of binary mixtures of hydrogen peroxide and water, 189.

Lead, Alloys of aluminium and, 281.

Linolenic acid and its isomers, 231.

Liquids, Controlled flow of, by simple automatic, multiple burette, 217.

Maleic acid, Ozonization of,
in ethyl acetate, 32
in formic acid, 32

Maltol from Corydalis ochotensis, 79.

Mercerization, Heat of, 168.

Mercerized celluloses, Heats of adsorption and wetting of, by sodium hydroxide solutions, water, and methyl alcohol, 168.

Mercury
in organomercurials, Microdetermination of chlorine or bromine and, 246.
resonance radiation, The quenching of, by ethylene, 44.

Methyl alcohol, Heat of wetting of mercerized cottons by, 171.

2-Methyl-4-amino-naphthalene, 269.

3-Methyl-1-hydroxy-2-naphthoic acid, 270.

3-Methyl-1-hydroxy-2-naphthoic nitrile, 271.

3-Methyl-1-naphthol, 270.

2-Methyl-4-nitro-naphthalene, 269.

Michrochemical technique
IV. The microdetermination of mercury and halogen in organomercuric halides, 246.

Molecules, Gaseous, Velocity distribution of, 123.

Naphthalene
1-Acetamino-2-methyl-4 nitro-, 269.
1-Amino-2-methyl-, 268.
1-Amino-2 methyl-4-nitro-, 269.
2-Methyl-4-amino-, 269.
2-Methyl-4-nitro-, 269.
1-Nitro-2 methyl-, 268.

Naphthalene derivatives from substituted γ-phenylcrotonic esters, 265.

Naphthenic hydrocarbons, Physical properties of, 28, 403.

Naphthoic acid, 3-Methyl-1-hydroxy-, 268, 270.

2-Naphthoic nitrile, 3-Methyl-1-hydroxy-, 271.

1-Naphthol, 3-Methyl-, 270.

Nickel ores and concentrates, Determination of metals of platinum group in, 333.

Nitric acid separation of metals of platinum group in nickel ores, 339.

Nitric oxide inhibited thermal decomposition of
n-butane, 1.
ethane, 351.

1-Nitro-2-methyl-naphthalene, 268.

Nitroxyl perchlorate, Preparation, analysis, and properties of, 358.

Ochotensimine (F48) from Corydalis ochotensis, 76.

Ochotensine (F17) from Corydalis ochotensis, 77.

Oils, British Columbia fish, Phosphorus and iodine contents of, 386.

Oils, Proposed modification of Emmerie's iron-dipyridyl method for determining tocopherol content of, 405.

Oils, Turner Valley crude. Fractionation of, using Stedman columns, 12, 388.

Organomercuric halides, Microdetermination of mercury and halogen in, 246.

Osmium, Determination of, in nickel ores and concentrates, 338.

Oxidase, Cytochrome, Inhibition of, by phenothiazine derivatives, 347.

Oxidation of
Alkaloid F36 (sinactine), 101.
cheilanthifoline O-ethyl ether, 102.
polystyrenes, 310.

Oxygen adsorbed on activated charcoal, Equilibrium pressures of, 35.

Ozone, Bromine photosensitized decomposition of, 363.

Ozonization investigations, Formic acid as a solvent for, 30.

Palladium, Determination of, in nickel ores and concentrates, 341.

Papain
Chemical changes in plastein formation by, and by pepsin, 272.
Formation of a plastein by, 255.
Synthesis of plastein by, 273.

Papain hydrolysis of papain plastein, 274.

Paraffinic compounds, Properties of, 27, 402.

Paraffins, Lower
Kinetics of the thermal decomposition of,
V. Nitric oxide inhibited decomposition of *n*-butane, 1.
VI. Ethane, 203.
VII. Nitric oxide inhibited decomposition of ethane, 351.

Pepsin, Chemical changes in plastein formation by, 272.

Peptic hydrolysis of
papain plastein, 274.
peptic plastein, 275.
typical proteins, 276.

Peptic plastein, 275
in urea solution, Complexity of, 305.
Peptic hydrolysis of, 275.

Phase rule diagram of the system water–hydrogen-peroxide, 69.

Phenothiazine and sulphanilamide, Enzyme inhibition by derivatives of, 345.

Phenylacetone
condensation with
diethyl malonate, 267.
ethyl cyanoacetate, 271.

γ-Phenylcrotonic esters, Substituted, Naphthalene derivatives from, 265.

Phosphorus and iodine contents of British Columbia fish oils. 386.

Photodecomposition of ozone, Bromine sensitized, 363.

Photoelectric colorimeter-fluorimeter, Description of, 240.

Photosensitization
Bromine sensitized photodecomposition of ozone, 363.
Cadmium sensitized reactions of ethylene, 47.
Quenching of mercury resonance radiation by ethylene, 44.

Plastein formation, Problem of,
I. The formation of a plastein by papain, 255.
II. The chemical changes involved in plastein formation by papain and by pepsin, 272.
III. A note on the complexity of peptic plastein in urea solution, 305.

Platinum group in nickel ores and concentrates. Determination of the metals of the, 333.

Platinum, Massive Platinized glass as a laboratory substitute for, 318.

Polymers, The reaction of ploystyrenes with bromine, 309.

Polystyrene(s)
Reaction with
benzoyl hydrogen peroxide, 311.
bromine, 309.
Oxidation, 310.

Potassium carbonate
Activity coefficients in aqueous solution, 373.
pH of solutions of, at 25° C., 160, 164.

Pressures(s)
Effect on inhibition by nitric oxide of the thermal decomposition of *n*-butane, 2.
Equilibrium, of oxygen adsorbed on activated charcoal, 35.
Variation of density of gaseous chlorine with, 55.

Protopine from
Corydalis ochotensis, 78.
Corydalis claviculata, 98.
Corydalis nobilis, 291.
Corydalis pallida, 82.

Reaction velocity of
bromine sensitized photodecomposition of ozone, 363.
chemisorption of oxygen by charcoal, 35.
decomposition of hydrogen peroxide on glass and gold, 85, 87.
thermal decomposition of
benzylidene diacetate, *o*-chlorobenzylidene diacetate, benzylidene dibutyrate, 223.
n-butane (nitric oxide inhibited), 1.
ethane, 203.
ethane (nitric oxide inhibited), 351.
glyoxal tetra-acetate, 410.

Rhodium, Determination of, in nickel ores and concentrates, 341.

Riboflavin, Photoelectric colorimeter-fluorimeter in determination of, 240.

Ruthenium, Determination of, in nickel ores and concentrates, 338.

Scoulerine, Ethylation and degradation, 415.

Selenium
content of Saskatchewan wheat, 138.
Relation of occurrence of, to soil type, 149.

Silver, Determination of, in nickel ores and concentrates, 342.

Sinactine (Alkaloid F36), Oxidation of, 101.

Sodium carbonate
Activity coefficients in aqueous solution, 373.
pH of solutions of, at 25° C., 160, 164.

Sodium hydroxide, Heat of adsorption of, by mercerized and standard cottons, 170.

Sodium hypobromite, Action on
benzylphenylsuccinamide, 95.
hexylphenylsuccinamide, 94.
methylphenylsuccinamide, 92.

Soil type, Saskatchewan, Relation of occurrence of selenium to, 149.

Solid solutions of hydrogen peroxide and water, 66.

Solubility measurements in the region of the critical temperature, 293.

Specific volumes of hydrogen-peroxide–water mixtures, 191.

Stedman columns, Fractionation of Turner Valley crude oils using, 12, 388.

Stylopine from
Corydalis claviculata, 98.
Corydalis nobilis, 289.

Succinamide, Action of sodium hypobromite on,
α-Methyl-α′-phenyl-, 92.
α-*n*-Hexyl-α′-phenyl-, 94.
α-Benzyl-α′-phenyl-, 95.

Succinic acid
α-Benzyl-α′-phenyl, 95.
α-*n*-Hexyl-α′-phenyl-, 94.
α-Methyl-α′-phenyl-, 91.

Succinic acids, Substituted, Derivatives of, IV. The action of alkaline sodium hypobromite on some α-alkyl-α′-arylsuccinamides, 90.

Succinimide
α-Methyl-α′-phenyl-, 92.
α-*n*-Hexyl-α′-phenyl-, 94.
α-Benzyl-α′-phenyl-, 95.

Sulphar ilamide, Enzyme inhibition by derivatives of phenothiazine and of, 345.

Sulphuric acid method in determination of metals of platinum group in nickel ores, 336.

Temperature
Critical dispersion (critical region), 118.
Effect on inhibition by nitric oxide of thermal decomposition of *n*-butane, 4.
Variation of density of gaseous chlorine with, 55.
Variation of viscosity of ethylene with, 135.
-viscosity-density relations of carbon dioxide in critical region, 326.
See Critical temperature region.

***d*-Tetrahydro-palmatine,** from
Corydalis nobilis, 289.
Corydalis pallida, 81.

***dl*-Tetrahydro-palmatine,** from
Corydalis nobilis, 289.
Corydalis pallida, 81.

Thermal decomposition of
benzylidene diacetate, benzylidene dibutyrate, and *o*-chlorobenzylidene diacetate, 223.
butane, 1.
ethane, 351, 203.
glyoxal tetra-acetate, 410.

Thiamin, Photoelectric colorimeter-fluorimeter in determination of, 240.

Tocopherol content of oils, A proposed modification of Emmerie's method for determining, 405.

Turner Valley crude oil, Fractionation of, using Stedman columns, 12, 388.

Ultra-violet absorption spectra of samples of Turner Valley crude oil containing aromatics, 25.

Uracil, 5-Methyl-6-phenyl-dihydro-, 92, 93.

Urea solution, Complexity of peptic plastein in, 305.

Vanillin, Action of ozone on,
in ethyl acetate, 33.
in formic acid, 33.

Vaporization, Latent heat of, of hydrogen-peroxide–water mixtures, 189.

Vapour pressures of binary mixtures of hydrogen peroxide and water, 181.

Velocity distribution of gaseous molecules, 123.

Veratric aldehyde, Action of ozone on,
in ethyl acetate, 34.
in formic acid, 34.

Viscosity
in the critical region. Ethylene, Measurement of, 128.
of carbon dioxide in the critical region, 322.

Vitamin B_1, See Thiamin.

Vitamin B_2, See Riboflavin.

Water(s)
Alberta, Determination of fluorine in, 151.
Heat of wetting of mercerized cotton by, 171.
Heavy, Catalytic decomposition of hydrogen peroxide in, 84.
on glass, 84.
on gold, 87.

Water and hydrogen peroxide
Solid solutions of, 66.
Vapour pressures and boiling points of binary mixtures of, 181.

Wetting, Heat of, of mercerized celluloses by sodium hydroxide solutions, water, and methyl alcohol, 168.

Wheat, Saskatchewan, Selenium content of, 138.

Wheat flour films, Gelation phenomena in, 194.